

**Guidance to Hong Kong Registered Ships Preparing for the Concentrated
Inspection Campaign on Ship's Stability in General
(Period from 1 September to 30 November 2021)**

Introduction

A Concentrated Inspection Campaign (CIC) on Ship's Stability in general was originally scheduled to be conducted from 1 September to 30 November 2020 in the Tokyo Memoranda of Understanding (MOU) region, which had been identified at the 29th meeting of Port State Control Committee of the Tokyo MOU held in Hangzhou, China in November 2018. Due to the impact of the Covid-19 pandemic, this CIC, jointly with the Paris MOU, is postponed to be held from 1 September to 30 November 2021, which has been re-identified at the 31st virtual meeting of Port State Control Committee of the Tokyo MOU in January 2021.

A ship will be subject to one inspection under this CIC during this period, and the inspection will be carried out in conjunction with the normal PSC inspection. Hence, a copy of the PSC inspection report (Form A and B) with the completed CIC questionnaire shall be kept onboard for record purposes.

Purpose

This CIC will confirm that whether the ship staff has assessed the actual stability condition. It will also create awareness among ship staff and ship owners about the importance of calculating the actual ship's stability condition on completion of cargo operations before the ship's departure and all stages of the voyage. It aims to ensure the ship complies with intact stability requirements (and damage stability requirements, if applicable) under the relevant International Maritime Organization (IMO) instruments.

Questionnaire Guidance

(Non-compliance with the requirements in questions marked with an asterisk (*) may be considered as a ground for detention.)

Question No.1*

Has the ship been provided with approved stability information which can be understood and easily used by the Master and loading officer?

1. The Master and responsible officer shall ensure that:

- (a) the stability information, such as Stability Booklet, strength data if required, and Loading Manual, approved by the Administration or Recognized Organization (RO) acting on behalf of the Administration is provided on board;
- (b) the approved stability information is understood and used correctly; and
- (c) the stability information is amended and approved by the Administration or RO if any alterations are applied to the ship's structures.

2. Requirements:

- (a) The Master shall have sufficient information giving guidance for the stability of the ship and stresses in the ship's structure under varying conditions of service.
- (b) The Master of ship with type "A", "B-60" or "B-100" load line shall have approved stability booklet or other document complies with the relevant damage stability requirements.

3. Convention reference:

	<u>Convention</u>	<u>For ships constructed in specific period</u>
(a)	International Convention on Load Lines 1988 Protocol/ANNEX I/Reg.10	on or after 21/07/1968 and before 01/01/2005
(b)	International Convention on Load Lines 2003 Amendment/ANNEX I/Reg.10	on or after 01/01/2005
(c)	SOLAS 1960 /Chapter II/Reg.19	before 25-5-1980
(d)	SOLAS 1974 /Chapter II-1/Reg.19	on or after 25-5-1980 and before 1-9-1984
(e)	SOLAS 1981 Amendment/Chapter II-1/Reg.22	on or after 1-9-1984 and before 29-4-1990
(f)	SOLAS 1988 Amendment/Chapter II-1/Reg.22	on or after 29-4-1990 and before 1-2-1992
(g)	SOLAS 1989/1990 Amendment/Chapter II-1/Reg.25-8	on or after 1-2-1992 and before 1-1-2009
(h)	SOLAS 2006 Amendment/Chapter II-1/Reg.5-1	on or after 1-1-2009 and before 1-7-2020
(i)	SOLAS 2017 Amendment/Chapter II-1/Reg.5-1	on or after 1-7-2020
(j)	SOLAS 2008 Amendment/Chapter II-1/Reg.5-1	-
(k)	SOLAS 1991/1992 Amend/Chapter VI/Reg.9, Grain code Part A, 6	-

4. Note:

Ship may be considered for detention if the answer is “No” for this question.

Question No.2*

Is the data used in the stability check for departure complete and correct?

1. The Master and responsible officer shall ensure that:

- (a) the correct light weight, including the position of longitudinal centre of gravity (LCG), vertical centre of gravity (VCG) and transverse centre of gravity (TCG) of the ship is applied in the stability calculation;
- (b) the correct density of liquids such as fuel oils, ballast water and fresh water is used in the stability calculation;
- (c) the correct density is used for the stability calculation (dock water, sea water, fresh water);
- (d) the correct cargo information is used for the stability calculation, such as verified Gross Mass of containers, stowage Factor and Gross mass of bulk and general cargo), specific gravity/density of liquid cargo, number of vehicles/weight/VCG/LCG of roll-on/roll-off cargo, and number of passengers;
- (e) the correct cargo and ballast tank content volume is used for the stability calculation;
- (f) the VCG/LCG is applied correctly in the stability calculation;
- (g) the correction of trim is applied for obtaining ballast and fuel tank volumes; and
- (h) the effect of the free surface of partially filled tanks, the alterations of the installation of additional equipment or structures (e.g., scrubbers, cranes, etc.), the adverse environmental conditions (such as ship's deck and superstructure icing), is considered in the stability calculation.

2. Requirements:

- (a) The Master and responsible officer shall ensure that the operating condition of the ship does not deviate from a studied loading condition or verify by calculation that the stability criteria are satisfied for this loading condition. Relevant loading conditions for the stability studies can be found in the approved intact stability booklet. The stability calculation can be done either manually by use of the procedure described in the intact stability book or by use of an approved stability instrument.
- (b) The Master and responsible officer shall ensure that the method of using the curves or tables for checking satisfaction with the stability criteria could only be used when it is appropriate. The curves or tables used for checking satisfaction with the stability criteria are:
 - .1 curves or tables of minimum operational metacentric height (GM) versus draught, or
 - .2 corresponding curves or tables of the maximum allowable vertical centre of gravity (KG) versus draught, or
 - .3 equivalents of either of these curves.
- (c) The Master and responsible officer of ship carrying timber deck cargoes shall ensure that the safe margin of stability at all stages of the voyage shall be applied. The relevant stability requirements as per IMO resolution A.1048(27) may be considered in the approved stability booklet.
- (d) When loading grain on cargo ship or bulk carrier, the master and responsible officer shall ensure that the loading is in accordance with the regulations of the International Code for the Safe Carriage of Grain in Bulk (IMO resolution MSC. 23 (59)) and the ship must have a Document of Authorization for the carriage of grain issued either by the Administration or by a RO with an approved Grain Loading Manual.
- (e) The Master and responsible officer shall ensure that the correct value of free surface moment (FSM) is used in calculation of stability with liquid in a partially filled tank.
- (f) The Master and ship responsible officer(s) shall carry out a stability check before each departure.

3. Convention reference:

	<u>Convention</u>	<u>For ships constructed in specific period</u>
(a)	2008 IS CODE 2018 Amendment/PART A/Chapter 2	on or after 1-7-2010
(b)	SOLAS 1960/Chapter II/Reg.19	before 25-5-1980
(c)	SOLAS 1974/Chapter II-1/Reg. 19	on or after 25-5-1980 and before 1-9-1984
(d)	SOLAS 1981 Amendment/Chapter II-1/Reg.22	on or after 1-9-1984 and before 29-4-1990
(e)	SOLAS 1988 Amendment/Chapter II-1/Reg.22	on or after 29-4-1990 and before 1-2-1992
(f)	International Convention on Load Lines 2008 Amendment/Chapter I/Reg.1, SOLAS 2014 Amendment/Chapter VI/Reg.2;	-
(g)	SOLAS 2008 Amendment/Chapter II-1/Reg.20.1	-
(h)	GRAIN Code/Annex/Part A/ 7	-
	<u>Convention</u>	<u>For passenger ships constructed in specific period</u>
(i)	SOLAS 2006 Amendment/Chapter II-1/Reg.20	on or after 1-1-2009 and before 1-7-2020
(j)	SOLAS 1988 Amendment/Chapter II-1/Reg.8.7.4	on or after 29-4-1990 and before 1-10-1994
(k)	SOLAS 1991/1992 Amendment/Chapter II-1/Reg.8.7.4	on or after 1-10-1994 and before 1-7-1997
(l)	SOLAS 1994/1995 Amendment/Chapter II-1/Reg.8.7.4	on or after 1-7-1997 and before 1-7-1998
(m)	SOLAS 1996-1998 Amendment/Chapter II-1/Reg.8.7.4	on or after 1-7-1998 and before 1-1-2009
	<u>Convention</u>	<u>For passenger and ships constructed in specific period</u>
(n)	SOLAS 2017 Amendment/Chapter II-1/Reg.20	on or after 1-7-2020

4. Note:

Ship may be considered for detention if the answer is “No” for this question.

Question No.3*

Does the ship comply with the stability criteria as applicable to the ship type?

1. The Master and responsible officer shall ensure that:

- (a) the stability records and loading plan shall comply with stability criteria; and
- (b) the ship's loading condition shall be correspondence with the similar condition described in the approved stability information.

2. Requirements:

- (a) The Master of cargo ship with a length of 24m and upwards or passenger ship shall ensure the ship is in compliance with the intact stability criteria as well as the requirements of Part A of the 2008 Intact Stability Code for ship constructed on or after 1-7-2010.
- (b) The Master of passenger ship, cargo ships constructed on or after 1-1-2009 of 80m and more in length, cargo ship constructed on or after 1-7-1998 of 80m and more in length, cargo ship constructed on or after 1-2-1992 of 100m and more in length, oil tanker, chemical tanker or gas carrier shall ensure the ship is in compliance with both intact and damage stability criteria.

3. Convention reference:

	<u>Convention</u>	
(a)	Intact stability requirements:	<u>For ships constructed in specific period</u>
	.1 International Convention on Load Lines Chapter I, Reg.1/ANNEX I/ Reg.27	-
	.2 SOLAS 2008 Amendment/Chapter II-1/Reg.5-1 (SOLAS 1974/Chapter II-1/Reg.19 / SOLAS 1981/Chapter II-1/Reg.22)	-
	.3 SOLAS/Chapter VI/Reg.9, Grain code Part A 7.;	-
	.4 SOLAS 1988 Amendment/Chapter II-1/Reg. 22	on or after 29-4-1990 and before 1-1-2009
	.5 SOLAS 2006 Amendment/Chapter II-1/Reg. 5	on or after 1-1-2009 and before 1-7-2010
	.6 SOLAS 2008 Amendment/Chapter II-1/Reg.5-1	on or after 1-7-2010 and before 1-7-2020
	.7 SOLAS 2017 Amendment/Chapter II-1/Reg. 5	on or after 1-7-2020
(b)	Damage stability requirements for cargo ships:	<u>For cargo ships constructed in specific period</u>
	.1 SOLAS 1989/1990 Amendment/Chapter II-1/Reg.23-1	on or after 1-2-1992 and before 1-1-2009
	.2 SOLAS 1996-1998 Amendment/Chapter II-1/Reg.25-1	on or after 1-7-1998 and before 1-1-2009
	.3 SOLAS 2006 Amendment/Chapter II-1/Reg.5-1	on or after 1-1-2009 and before 1-7-2020
(c)	Damage stability requirements for Passenger ships:	<u>For passenger ships constructed in specific period</u>
	.1 SOLAS 1974 /Chapter II-1/Reg. 7	on or after 25-5-1980 and before 1-9-1984
	.2 SOLAS 1981 Amendment/Chapter II-1/Reg.8	on or after 1-9-1984 and before 29-4-1990

.3 SOLAS 1988 Amendment/Chapter II-1/Reg.8.1	on or after 29-4-1990 and before 1-10-1994
.4 SOLAS 1991/1992 Amendment/Chapter II-1/Reg.8	on or after 1-10-1994 and before 1-7-1997
.5 SOLAS 1994/1995 Amendment/Chapter II-1/Reg.8	on or after 1-7-1997 and before 1-7-1998
.6 SOLAS 1996-1998 Amendment/Chapter II-1/Reg.8	on or after 1-7-1998 and before 1-1-2009
.7 SOLAS 2006 Amendment/Chapter II-1/Reg.8	on or after 1-1-2009 and before 1-7-2020
.8 SOLAS 2018 Amendment/Chapter II-1/Reg.8	on or after 1-7-2020

4. Note:

Ship may be considered for detention if the answer is “No” for this question.

Question No.4*

Is there evidence to show that the Master or responsible officer can determine the stability of the ship under varying conditions of service using the approved stability information provided on board?

1. The Master and responsible officer shall ensure that:

- (a) the familiarization training on carrying out stability calculations and in using the stability instrument (if applicable) shall be carried out;
- (b) the verification and calculation of the ship's stability shall be familiarized;
- (c) the guidance of the stability information satisfactory to the Administration for rapid and simple processes under varying conditions of service shall be provided;
- (d) the effect of free surface of partially filled tanks shall be taken into account correctly;
- (e) all criteria as set out in IS code 2008 Part B, 3.3 and 3.4 (IS code 2008, Part A, 2.1.1) shall be applied for all conditions of loading;
- (f) IS code 2008, Part B, 3.4 Standard conditions of loading shall be examined for a cargo ship:
 - .1 ship in the fully loaded departure condition, with cargo homogeneously distributed throughout all cargo spaces and with full stores and fuel;
 - .2 ship in the fully loaded arrival condition with cargo homogeneously distributed throughout all cargo spaces and with 10% stores and fuel remaining;
 - .3 ship in ballast in the departure condition, without cargo but with full stores and fuel; and
 - .4 ship in ballast in the arrival condition, without cargo and with 10% stores and fuel remaining.

2. Requirement:

Master and responsible officer shall understand the stability information and calculate ship's stability.

3. Convention references:

	<u>Convention</u>	<u>For ships constructed in specific period</u>
(a)	STCW Code Section A-VIII/2, Part 5 (102.6)	-
(b)	SOLAS 1960/Chapter II/Reg.19	before 25-5-1980
(c)	SOLAS 1974/Chapter II-1/Reg.19	on or after 25-5-1980 and before 1-9-1984)
(d)	SOLAS 1981 Amendment/Chapter II-1/Reg.22	on or after 1-9-1984 and before 29-4-1990)
(e)	SOLAS 1988 Amendment/Chapter II-1/Reg.22	on or after 29-4-1990 and before 1-2-1992)
(f)	SOLAS 1989/1990 Amendment/Chapter II-1/Reg.25-8	on or after 1-2-1992 and before 1-1-2009)
(g)	SOLAS 2006 Amendment/Chapter II-1/Reg.5-1	on or after 1-1-2009 and on before 1-7-2020)
(h)	SOLAS 2017 Amendment/Chapter II-1/Reg.5-1	on or after 1-7-2020

4. Note:

Ship may be considered for detention if the answer is "No" for this question.

Question No.5*

If the ship is provided with a Stability Instrument, is it approved by the Administration?

1. The Master and responsible officer shall ensure that:

- (a) the stability instrument is approved by the Administration or a RO acting on behalf of the Administration.
- (b) a document of approval for the stability instrument issued by the Administration shall be provided on board, if applicable.

2. Requirements:

- (a) The Master shall have approved stability instrument (instrument) used as a supplement to the approved stability booklet to facilitate stability calculations. The instrument is not a substitute for the approved stability booklet.
- (b) The Master of the following ship shall have the stability instrument with a document of approval issued by Administration or RO acting on behalf of the Administration:
 - .1 oil tanker;
 - .2 chemical tanker;
 - .3 gas carrier;
 - .4 bulk carrier of less than 150 m in length constructed on or after 1 July 2006 shall be fitted with a loading instrument capable of providing information on the ship's stability in the intact condition; and
 - .5 ship having a length of 24 m and upwards, constructed on or after 1 July 2010 and a stability instrument is not mandatory but if it is being used as to supplement to the stability information book, it shall be approved by the Administration.

3. Convention reference:

	<u>Convention</u>	<u>Types of ships</u>
(a)	SOLAS 2008 Amendment/Chapter II-1/Reg.5.1	All
(b)	Intact Stability Code 2008, Part A, Chapter 2, 2.1.6	All
(c)	SOLAS 2004 Amendment/Chapter XII/Reg.11.2	Bulk carriers of L < 150 m, KL ≥ 01-07-2006
(d)	MARPOL 2014 Amendment/Annex I/Reg. 28	Oil tankers
(e)	BCH Code, 2018 Consolidated Edition/Paragraph 2.2 – IBC Code/IBC 2014 Amendment/Paragraph 2.2	Chemical tankers
(f)	GC Code/Paragraph 2.2 - IGC Code 2014 Amendment/Chapter 2/Paragraph 2.2	Gas carriers

4. Note:

Ship may be considered for detention if the answer is “No” for this question.

Question No.6

If the ship is provided with a Stability Instrument, does the type of stability software in use meet the requirements for the relevant ship type?

1. The Master and responsible officer shall ensure that:

The type of stability software in use is relevant to the ship type according to the user manual for the stability instrument.

2. Requirements:

- (a) The types of stability software applicable to stability instruments are given below:
- Type 1: Software calculating intact stability only (for ships not required to meet a damage stability criterion);
 - Type 2: Software calculating intact stability and checking damage stability based on a limit curve or previously approved loading conditions;
 - Type 3: Software calculating intact stability and damage stability by direct application of pre-programmed damage cases for each loading condition; and
 - Type 4: Software calculating damage stability associated with an actual loading condition and actual flooding case, using direct application of user-defined damage, for providing operational information for safe return to port (SRtP). (at present only relevant to passenger ships).
- (b) Damage stability of both Type 3 and Type 4 stability software shall be based on a hull form model that is directly calculated from a full three-dimensional geometric model.
- (c) Tanker ships are accepted only type 2 and type 3 stability software.

3. Convention reference:

	<u>Convention</u>	<u>Types of ships</u>
(a)	Intact Stability Code, Part A 2.1.6, 2.1.1	Not applicable for a ship where the 2008 IS Code does not apply
(b)	SOLAS Chapter XII/Reg.11.3	Bulkers
(c)	MARPOL Annex I Reg.28.6	Tankers
(d)	IBC code Paragraph 2.2.6	Chemical tankers
(e)	IGC code Paragraph 2.2.6	Gas carriers
(f)	SOLAS 2004 Amendments/Chapter XII/Reg.11.2	Bulk carriers of L < 150 m, KL ≥ 01-07-2006
(g)	MARPOL 2014 Amendment/Annex I/Reg.28	Oil tankers
(h)	BCH Code 2018 Consolidated Edition/Paragraph 2.2 - IBC/IBC 2014 Amendment/Paragraph 2.2	Chemical tankers
(i)	GC Code/Paragraph 2.2 - IGC 2014 Amendment/Chapter 2/Paragraph 2.2	Gas carriers

4. Note:

Ship may be considered for issuing of deficiency if the answer is “No” for this question.

Question No.7

Is there evidence on board to show that the master/loading officer confirms that the “calculated” displacement and trim corresponds with the “observed” draughts?

1. The Master and responsible officer shall ensure that:

- (a) the calculated displacement and trim correspond with the observed draughts;
- (b) the previous stability calculation record and draught record were recorded on the ship’s logbook, voyage plan or so on (if available);
- (c) the draught marks are marked clearly at the bow and the stern; and
- (d) they are able to calculate the displacement and verify the observed draughts correspond with the calculated displacement.

2. Requirements:

- (a) All passenger ships and cargo ships constructed on or after 1-1- 2009, respectively shall have scales of draughts marked clearly at the bow and stern. In the case where the draught marks are not located where they are easily readable, or operational constraints for a particular trade make it difficult to read the draught marks, then the ship shall also be fitted with a reliable draught indicating system for determining the bow and stern draughts;
- (b) The draught shall be recorded before commencing the voyage;
- (c) The condition and state of the vessel, its stability, shall be considered in voyage and passage planning; and
- (d) Ships to be fitted with reliable draught indicating system if the draught marks are not easily readable.

3. Convention reference:

	<u>Convention</u>
(a)	SOLAS 1988 amendment by IMO Res. MSC12(56) and 2008 amendment by IMO Res. MSC216(82)
(b)	SOLAS/Chapter V/Reg.28.1 and Res.A.916(22)
(c)	IMO Res.A893(21) "Guidelines for voyage planning” Annex 2.1.1
(d)	SOLAS Ch II-1Reg. 5.6

4. Note:

This question is for information purposes only.

Question No.8

If the ship is provided with a Stability Instrument, has the accuracy of the stability instrument been verified periodically by applying at least one approved test condition?

1. The Master and responsible officer shall ensure that:

The stability instrument is verified by applying at least one approved test condition for the stability instrument's accuracy and reliability.

2. Requirements:

- (a) It is the ship master's responsibility of checking the accuracy of the stability instrument at each annual survey by applying at least one approved test condition;
- (b) All oil tankers shall be fitted with a stability instrument, capable of verifying compliance with intact and damage stability requirements approved by the Administration having regard to the performance standards recommended by IMO;
- (c) All bulk carriers of 150 m in length and upwards shall be fitted with a loading instrument capable of providing information on hull girder shear forces and bending moments, taking into account the recommendation adopted by IMO; Bulk carriers of 150 m in length and upwards constructed before 1 July 1999 shall comply with this requirement not later than the date of the first intermediate or periodical survey of the ship to be carried out after 1 July 1999.
- (d) All bulk carriers of less than 150 m in length constructed on or after 1 July 2006 shall be fitted with a loading instrument capable of providing information on the ship's stability in the intact condition. The computer software shall be approved for stability calculations by the Administration and shall be provided with standard conditions for testing purposes relating to the approved stability information.

3. Convention reference:

	<u>Convention</u>	<u>Types of ships</u>
(a)	Intact Stability Code, Part A 2.1.6, B 4.1.9	All
(b)	SOLAS Chapter XII/Reg.11.3	Bulkers
(c)	MARPOL Annex I Reg.28.6	Tankers
(d)	IBC code Paragraph 2.2.6	Chemical tankers
(e)	IGC code Paragraph 2.2.6	Gas carriers
(f)	SOLAS 2004 Amendments/Chapter XII/Reg.11.2	Bulk carriers of L < 150 m, KL ≥ 01-07-2006
(g)	MARPOL 2014 Amendment/Annex I/Reg.28	Oil tankers
(h)	BCH Code 2018 Consolidated Edition/Paragraph 2.2 - IBC/IBC 2014 Amendment/Paragraph 2.2	Chemical tankers
(i)	GC Code/Paragraph 2.2 - IGC 2014 Amendment/Chapter 2/Paragraph 2.2	Gas carriers
(j)	SOLAS 2018 Amendment/Chapter II-1/Reg.8.1.3.1	All

4. Note:

This question is for information purposes only.

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